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EXAMINER

TRAN, PHILIP B

ART UNIT PAPER NUMBER

2155

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,190	Applicant(s) DATTA ET AL.	
	Examiner Philip B. Tran	Art Unit 2155	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Request for Reconsideration

Notice to Applicant

1. This communication is in response to the amendment filed 15 October 2005.
Claims 1, 8, 13-14 have been amended. Claim 11 has been previously canceled.
Claims 18-21 have been newly added. Therefore, claims 1-10 and 12-21 are pending for further examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The analysis under 35 U.S.C. 112, first paragraph, requires that the scope of protection sought be supported by the specification disclosure. The pertinent inquiries include determining (1) whether the subject matter defined in the claims is described in the specification and (2) whether the specification disclosure as a whole is to enable one skilled in the art to make and use the claimed invention.

(1) Claims 1, 8 and 13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The "invention" for the purpose of the first paragraph analysis is defined by the claims. The description requirement is simply that the claimed subject matter must be described in the specification. The function of the description requirement is to ensure

that the applicant had possession of the invention on the filing date of the application.

The application need not describe the claim limitations exactly, but must be sufficiently clear for one of ordinary skill in the art to recognize that the applicant's invention encompasses the recited limitations. The description requirement is not met if the application does not expressly or inherently disclose the claimed invention.

Specification does not explicitly describe nor is sufficiently clear for one of ordinary skill in art to recognize the following negative limitation steps as recited in claims 1, 8 and 13:

- Selects an IP address from the data component based on information about the status of a path to the server, said information obtained at least in part by pinging a router on a path to the server to determine if the router is reliable connection component, **said IP address selection made without regard to the router's proximity to the server, ...** (see claim 1).
- Supplying the IP address of the router in a response to the resolution request **without regarding to the router's proximity to the server**, thereby directing traffic to the server over a path through the router (see claim 8).
- Selecting an IP address **without regard to a connection component's proximity to the server** based on the connection component's status which is determined at least in part by pinging the connection component (see claim 13).

Therefore, claims 1, 8 and 13 are unclear that the one ordinarily skilled in the art cannot recognize the encompassed claimed limitations.

(2) Claims 1, 8 and 13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The enablement requirement necessitates a determination that the disclosure contains sufficient teaching regarding the subject matter claimed as to enable one skilled in the pertinent art to make and use the claimed invention. In essence, the scope of enablement provided to one ordinarily skilled in the art by the disclosure must be commensurate with the scope of protection sought by the claims.

Currently, the most prevalent standard for measuring sufficient enablement to meet the requirements of 112 is that of "undue experimentation". The test is whether, at the time of the invention, there was sufficient working procedure for one skilled in the art to practice the claimed invention without undue experimentation. It is important to note that the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. A skilled artisan is given sufficient direction or guidance in the disclosure. Moreover, the experimentation required, in addition to not being undue, must not require ingenuity beyond that expect of one of ordinary skill in the art.

Undue experimentation and ingenuity would be required beyond one ordinarily skilled in the art to practice the following negative limitation steps as recited in claims 1, 8 and 13:

- Selects an IP address from the data component based on information about the status of a path to the server, said information obtained at least in part by pinging a router on a path to the server to determine if the router is reliable connection component, **said IP address selection made without regard to the router's proximity to the server**, ... (see claim 1).
- Supplying the IP address of the router in a response to the resolution request **without regarding to the router's proximity to the server**, thereby directing traffic to the server over a path through the router (see claim 8).
- Selecting an IP address **without regard to a connection component's proximity to the server** based on the connection component's status which is determined at least in part by pinging the connection component (see claim 13).

Undue experimentation would be needed to **select an IP address without regard to a connection component's proximity to the server**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-9, 12-16, 18-19 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zisapel et al (Hereafter, Zisapel), U.S. Pat. No. 6,665,702 in view of Bommareddy et al (Hereafter, Bommareddy), U.S. Pat. No. 6,779,039.

Regarding claim 1, Zisapel teaches a connection-sensitive domain name resolution device, comprising:

a data component identifying IP addresses for at least two paths to a server which has a domain name (i.e., identifying IP addresses for at least two paths to each server) [see Figs. 3A-5] ; and

a code component which receives a domain name resolution request specifying the domain name, selects an IP address from the data component based on information about the status of a path to the server, and supplies the selected IP address in response to the domain name resolution request (i.e., selecting an IP address based on information about the status of a path to the server by implementation of load balancer for fail-over management and routing packets to the servers) [see Figs. 3A-5 and Col. 9, Lines 15-25 and Col. 17, Lines 6-67], said IP address selection made without regard

to the router's proximity to the server (i.e., selecting IP address based upon F content function) [see Col. 17, Line 35 to Col. 18, Line 59].

Zisapel does not explicitly teach pinging a router on a path to the server to determine if the router is reliable connection component. However, Bommareddy, in the same field of load balancing and routing message traffic endeavor, discloses monitoring the health of routers by periodically sending a ping packet to router 114 to confirm that the flow is operative [see Bommareddy, Col. 7, Lines 40-62]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teaching of pinging a router on a path to the server to determine if the router is reliable connection component in the system of router clustering disclosed by Bommareddy into the teaching of load-balancing with a connection-sensitive domain name resolution device disclosed by Zisapel in order to efficiently and actively monitor the health of the routers and/or connection paths to the server for detecting a failure and thus re-routing the traffic to the remaining operational router(s) [see Bommareddy, Col. 7, Lines 40-62].

Regarding claim 2, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1, wherein IP addresses in the data component identify routers on paths to the server (i.e., IP addresses paths to the server), and the code component avoids selecting the IP address of a router that is on a path to the server but is not available (i.e., balancing the load among the three ISPs for incoming connections

and in the event that the router indicated as first choice for connection is unavailable or overloaded, then a second choice router is used) [see Col. 17, Lines 6-17].

Regarding claim 3, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1, wherein IP addresses in the data component identify routers on paths to the server (i.e., IP addresses paths to the server), and the code component selects the IP address in a round-robin manner by selecting the next IP address in a list of IP addresses of routers that are on paths to the server and are available when the selection is made (i.e., round-robin approach can be used by DNS to resolve IP addresses and in combination with a fail-over management scheme to select IP address and load balance requests across the ISPs) [see Col. 1, Lines 24-35 and Col. 17, Lines 6-17].

Regarding claim 4, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1, wherein the code component selects the IP address of an under-loaded path, thereby tending to balance the loads on the paths to the server (i.e., a fail-over management scheme recognizes when connection is unavailable or overloaded, then balancing the loads on another path to the server is carried out) [see Col. 17, Lines 6-17].

Regarding claim 5, Zisapel and Bommareddy do not explicitly teach the connection-sensitive domain name resolution device of claim 1, wherein the device is

placed between the server and a router for the server. However, this is a matter of engineering choice to implement the placement of DNS in the network in such an arrangement that DNS is located between the server and router. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to alter the arrangement and locate the DNS elsewhere in the network while the DNS in combination with the fail-over management scheme still performing selection of IP address and load balance requests across the routers and ISPs to the servers [see Zisapel, Col. 9, Lines 14-25 and Col. 17, Lines 6-17].

Regarding claim 6, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1, in combination with a router for the server, the router having multiple connections to the Internet (i.e., the Internet connection to the server through ISPs and routers) [see Abstract and Figs. 3B-5].

Regarding claim 7, Zisapel further the connection-sensitive domain name resolution device of claim 1, in combination with a server-sensitive domain name resolver, wherein the combination performs load-balancing over server paths and also performs load-balancing over multiple servers [see Figs. 1A-5 and Col. 1, Lines 24-67 and Col. 9, Lines 14-25 and Col. 15, Line 57 to Col. 16, Line 15].

Claim 8 is rejected under the same rationale set forth above to claim 1.

Claim 9 is rejected under the same rationale set forth above to claim 2.

Claim 12 is rejected under the same rationale set forth above to claim 4.

Claim 13 is rejected under the same rationale set forth above to claim 1.

Regarding claim 14, Zisapel does not explicitly teach the configured medium of claim 13 wherein the selecting steps comprises determining whether each of at least two routers in a connection responds to ping. However, Bommareddy, in the same field of load balancing and routing message traffic endeavor, discloses monitoring the health of routers by periodically sending a ping packet to router 114 to confirm that the flow is operative [see Bommareddy, Col. 7, Lines 40-62]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teaching of pinging a router on a path to the server to determine if the router is reliable connection component in the system of router clustering disclosed by Bommareddy into the teaching of load-balancing with a connection-sensitive domain name resolution device disclosed by Zisapel in order to efficiently and actively monitor the health of the routers and/or connection paths to the server for detecting a failure and thus re-routing the traffic to the remaining operational router(s) [see Bommareddy, Col. 7, Lines 40-62].

Claim 15 is rejected under the same rationale set forth above to claim 3.

Claim 16 is rejected under the same rationale set forth above to claim 4.

Regarding claim 18, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1 wherein the code component includes code for maintaining logs (i.e., status and statistics table) [see Col. 13, Lines 1-67].

Regarding claim 19, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1 wherein the code component includes code for sending alerts to system administrators (i.e., administrative manager) [see Col. Col. 9, Line 58 to Col. 10, Line 29 and Col. 17, Line 35 to Col. 18, Line 59].

Regarding claim 21, Zisapel further teaches the connection-sensitive domain name resolution device of claim 1 wherein the device is configured for multi-homing (i.e., multi-homing environment) [see Col. 15, Line 53 to Col. 16, Line 3].

5. Claims 10 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zisapel, U.S. Pat. No. 6,665,702 in view of Bommareddy et al (Hereafter, Bommareddy), U.S. Pat. No. 6,779,039 and further in view of Mogul, U.S. Pat. No. 6,262,987.

Regarding claim 10, Though Zisapel does suggest TTL in the process of polling and determining connection status [see Zisapel, Col. 3, Lines 23-54]. Zisapel and Bommareddy do not explicitly teach the method of claim 8, further comprising the step of adjusting the time-to-live to be associated with a DNS record for an IP address in a path to the server. However, Mogul, in the same field of Internet communication using

DNS endeavor, discloses updating time-to-live (TTL) associated with the DNS record [see Mogul, Abstract and Col. 1, Line 35 – Col. 2, Line 10 and Col. 4, Lines 19-32 and Col. 6, Lines 10-50]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teaching of setting a DNS record time-to-live (TTL) disclosed by Mogul into the teaching of load-balancing with a connection-sensitive domain name resolution device disclosed by Zisapel because it would have enabled the prevention of DNS cache miss due to TTL expiration which may result in a time-consuming reload [see Mogul, Col. 1, Line 35 – Col. 2, Line 10].

Claim 17 is rejected under the same rationale set forth above to claim 10.

6. Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Zisapel, U.S. Pat. No. 6,665,702 in view of Bommareddy et al (Hereafter, Bommareddy), U.S. Pat. No. 6,779,039 and further in view of Vaid et al (Hereafter, Vaid), U.S. Pat. No. 6,502,131.

Regarding claim 20, Zisapel and Bommareddy do not explicitly teach the connection-sensitive domain name resolution device of claim 1 wherein the code component includes authentication and security code. However, Vaid, in the same field of Internet communication using DNS endeavor, discloses security services includes functions such as access control, authentication, authorization and encryption [see Vaid, Col. 25, Line 22 – Col. 26, Line 54]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teaching of

security services disclosed by Vaid into the teaching of load-balancing with a connection-sensitive domain name resolution device disclosed by Zisapel because it would have enabled to intelligent enforce policies and control network traffic in a more secure manner.

Response to Arguments

7. Applicant's arguments have been fully considered but they are not persuasive because of the following reasons:

Zisapel teaches a connection-sensitive domain name resolution device, comprising a data component identifying IP addresses for at least two paths to a server which has a domain name. For example, Zisapel discloses identifying IP addresses for at least two paths to each server [see Figs. 3A-5]. In addition, Zisapel further teaches a code component which receives a domain name resolution request specifying the domain name, selects an IP address from the data component based on information about the status of a path to the server, and supplies the selected IP address in response to the domain name resolution request. For example, Zisapel discloses selecting an IP address based on information about the status of a path to the server by implementation of load balancer for fail-over management and routing packets to the servers [see Figs. 3A-5 and Col. 9, Lines 15-25 and Col. 17, Lines 6-67], said IP address selection made without regard to the router's proximity to the server (i.e., selecting IP address based upon F content function) [see Col. 17, Line 35 to Col. 18, Line 59].

Zisapel does not explicitly teach pinging a router on a path to the server to determine if the router is reliable connection component. However, Bommareddy, in the same field of load balancing and routing message traffic endeavor, discloses monitoring the health of routers by periodically sending a ping packet to router 114 to confirm that the flow is operative [see Bommareddy, Col. 7, Lines 40-62]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teaching of pinging a router on a path to the server to determine if the router is reliable connection component in the system of router clustering disclosed by Bommareddy into the teaching of load-balancing with a connection-sensitive domain name resolution device disclosed by Zisapel in order to efficiently and actively monitor the health of the routers and/or connection paths to the server for detecting a failure and thus re-routing the traffic to the remaining operational router(s) [see Bommareddy, Col. 7, Lines 40-62].

The instant specification does not explicitly describe nor is sufficiently clear for one of ordinary skill in art to recognize the following negative limitation steps as recited in claims 1, 8 and 13 such as said IP address selection made without regard to the router's proximity to the server. Therefore, claims 1, 8 and 13 are unclear that the one ordinarily skilled in the art cannot recognize the encompassed claimed limitations.

Moreover, undue experimentation and ingenuity would be required beyond one ordinarily skilled in the art to practice the negative limitation steps as recited in claims 1, 8 and 13 and undue experimentation would be needed to select an IP address without regard to a connection component's proximity to the server.

In summary, the examiner asserts that combination of Zisapel and Bommareddy teaches or suggests the subject matter broadly recited in independent claims. Claims 2-7, 9-10, 12 and 14-21 are also rejected at least by virtue of their dependency on independent claims. Accordingly, claims 1-10 and 12-21 are respectfully rejected as set forth above.

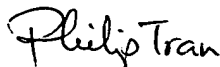
Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR REPLY TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE MAILING DATE OF THIS ACTION. IN THE EVENT A FIRST REPLY IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 CAR 1.136(A) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT, HOWEVER, WILL THE STATUTORY PERIOD FOR REPLY EXPIRE LATER THAN SIX MONTHS FROM THE MAILING DATE OF THIS FINAL ACTION.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Tran whose telephone number is (571) 272-3991. The Group fax phone number is (571) 273-8300. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar, can be reached on (571) 272-4006.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Philip B. Tran
Primary Examiner
Art Unit 2155
Feb 03, 2006